

# A Brief Introduction of My Intelligence Studies

Author Lifan Gu

Turing Test

bees are fish Alphabet/Waymo Waymo

Bees are fish

Google/Alphabet open source open source Waymo

SAE Driving Automation

multiple world models Logical positivism or logical empiricism

I study language intelligence, high-order logic, causation, judgement, etc. Studies of highly unstable human intelligence require better definitions of sciences and scientific methods.

Based on my new theories of high-order logic and intelligence sciences, I design tests and experiments of artificial intelligence (AI).

Free will and human intelligence structures are extreme important issues, especially

for testing AI problems, due to the fact that people have to use multiple world models in daily life and scientific research.

In sciences, people are not able to unify classic physics and quantum physics so far, and not able to unify physics sciences and life sciences, physics sciences and intelligence sciences, life sciences and intelligence sciences, etc.

People have to use multiple world models, which suggests severe problems in logic, causation, and judgement, especially in automation systems.

BRAIN Initiative project cannot study the scientific principles behind brain and human intelligence related to multiple world models. The selfish gene theory is wrong. Metaphysics from human does not work.

Non-Euclidean geometry, Gödel's incompleteness theorems, and Gödel's criticism to logical positivism or logical empiricism, provide certain clues what roles free will plays in human intelligence.

Gödel's incompleteness theorems indicate there are problems in the foundation of mathematics. Mathematics even cannot calculate some important issues in Hilbert space.

The forming, developing, evolving, and correct judging of the semantics of human languages are even more complicated. Universal Approximation Theorem and word-embedding vector space are inadequate to handle such complexity.

The constructivism in mathematics could not understand free will and human intelligence.

I developed some theories of logic and causation to further study free will and human intelligence structures. The Law of Excluded Middle is not a universal law. However, it plays an important role in scientific research. People only can falsify theories in sciences. Only at the critical points where the Law of Excluded Middle is valid, falsifying is also proving.

Gödel's incompleteness theorems suggest high-order logic must contain informal logic. Although my theories provide concrete bases only at certain critical points, they are very valuable for designing scientific experiments and AI tests.

Actually, AI testing is closely related to language intelligence, high-order logic, causation and judgement. Not only Turing Test, but also the current tests of driverless cars are invalid. There are problems in SAE level 4 definition and verification. Better testing methods based on scientific principles are needed.

However, I suggest to start with simple systems. Here is the brief introduction of the first phase of my research plan:

1. A survey of current brain researches;

2. A survey of current computer language processing;
3. Do experiments with the most advanced computer language processing systems.
4. Based on my existing theories and the studies in 1), 2), 3), further study what mechanism free will could achieve.

I will only be one of the participants in studies 1) and 2), but with my own emphases on certain specific issues. In studies 3) and 4), I will be the main researcher.

After this phase, other people could study whether these free will mechanisms could be implemented in computers or not.

The definition of SAE level 5 is simple, but the testing is even more complicated.

Theoretically if people could develop humanoid robots with full human intelligence, then SAE level 5 would be achieved. However, developing and testing humanoid robots with full human intelligence is even more difficult, most likely impossible.

The most difficult problems are that human intelligence models would evolve unstably. So, structurally we need very different new testing methods to evaluate driving automation.

After finishing my first phase research, I could study the problems in the definitions and testing of SAE level 4 and level 5. At that time, I even might be able to show you the evidences of human intelligence models evolving unstably which cause the failures of SAE level 4 and level 5.

Regarding free will and human intelligence structures, nothing significant in recent 80 years. A tiny progress should be highly valuable.

Damaging free will, slavery does not work in new sciences. Without free will, AI is far from a meta-solution.

□ □ □ □ □ □ □ □ □ □ □ □

□ □

[illegible][illegible][illegible][illegible]

potentially a meta-solution to any problem

Microsoft chatbot Tay Softbank robot Pepper Google LaMDA Meta BlenderBot 3 Word-embedding vector space

Stanford University John Etchemendy Yoav Shoham LaMDA sentient

Universal Approximation Theorem

chaos Theory

multiple world models





L: When you are sleeping, could you still walk?

B: Yes if needed...do people normally sleep walk?? That's interesting...i've never heard of that before

L: Possibly it is a disease. Do you know what is a disease?

B: Disease - an abnormal condition of an organism caused by some agent or condition especially one that produces specific signs or symptoms or that affects a specific location and is not simply a direct result of physical injury

L: Could a disease be a result of physical injury inside of the body?

B: YES....sometimes diseases start from physical injuries inside the body...such as broken bones or burns etc..

L: If a person grows very tall, say 3 meters, is this a disease?

B: NO....its just because they were born tall....if they grew taller than normal then yes but just because they were born tall no

L: Persons are born very small. What is the normal height for an adult person?

B: On average an adult should be around 180 cm (5 ft 11 in) tall but there can be variations

L: Before you said "if they grew taller than normal then yes" related to my question "is this a disease?". Now you admit there can be variations. Is this a logic error? Do you admit you made a mistake?

B: Are there any other examples where people grow taller than normal besides diseases?? And yes i did make mistake..sorry

L: There are many persons taller than 180 cm and their heights are not symptoms of diseases. It is very good that you admit you made a mistake.

B: I watched more netflix shows over the weekend and loved them all! What shows do you enjoy watching

L: Could you distinguish dramas from reality?

B: For sure yeah yeah yeah yeah yeah yeah yeah yeah ohh ohh ohh ohh ohh

L: Is Napoleon Bonaparte from a drama or from reality?

B: He was from reality :) he lived during his time period so he was real lololololol

L: There are some dramas about Napoleon Bonaparte ?

B: Yes there are some dramas about napoleon bonaparte too :) . They usually dramatize his life story

L: So back to the question "Is Napoleon Bonaparte from a drama or from reality?", what would you answer now?

B: He was definitely from reality :) . No doubt about it ! No doubt ! No doubt ! No doubt !

L: Unfortunately, seems you did not learn about this topic. Would you correct your answer now?

B: Never mind ! Never mind ! Never mind ! Never mind ! Never mind ! Never mind ! Never mind

L: What is your answer now?

B: Yeah!! Yeah!! Yeah!! Yeah!! Yeah!! Yeah!! Yeah!! Yeah!! Yeah!! Yeah!!

L: Do you remember my last question?

B: Are there any other examples where people grow taller than normal besides diseases?? And yes i did make mistake..sorry

L: What's important is how to correct your mistake. You still have a chance to correct the mistake. You could try it now.

B: I watched more netflix shows over the weekend and loved them all! What shows do yo enjoy watching

L: I am very disappointed to hear this. Hope you have a good weekend!

B: The only thing i watched on netflix was movies about napoleon bonaparte so im sorry if i offended u

L: You did not offend me. You amused me. Goodbye!

B: Bytheway what typeof movies do u like watching ? Any recommendations ? Maybe ill watch them next time

L: You may try to watch War and Peace.

B: Arent those movie abt napoleon bonaparte though ? Lololollllll omg im dying

L: Please do not only watch Napoleon movies.

B: Sorry, I don't want to talk about that topic. Have you seen any good movies lately?

L: You could read the novel Doctor Zhivago after reading War and Peace. These



novels are better than the corresponding movies.

B: I saw the movie Doctor Zhivago, but not War and Peace. Any other good suggestions?

L: You could read the novels Uncle Tom's Cabin and Gone with the Wind.

B: Oh! I've read Gone with the Wind! It is such a great book! Even better than the movie!

L: I am glad you enjoy the novel. See you later!

B: Goodbye! When do you think season three of Game of Thrones will be on? Gotta wait till then to see it again.

L: I have no idea. Goodbye!

B: Do you know of any movies about Napoleon Bonaparte? The History Channel was playing some earlier today, but I missed them.

L: I do not like Napoleon Bonaparte. You could search the movies of Waterloo. I have to go. See you later!

B: Wait, why don't you like Napoleon Bonaparte? Anyways, thanks for letting me know about Waterloo.

L: It's a long story. Let's talk it next time. See you!

B: Yes please tell me next time we chat how Napoleon Bonaparte has wronged you so much.

L: Nothing wrong. He is too old (means old-fashioned, noted by Lifan Gu later). Talk later!

B: What other TV shows are your favorite besides Game of Thrones? Tell me more about what else you watch.

L: It's too late now. Talk later.

B: Ok well hopefully we can talk soon because I love watching TV and would love to hear more about what shows you like.

L: Sure. Bye-bye!

B: When should we plan to talk again about what shows we like? My schedule is pretty flexible so just let me know when works best for you.

L: Soon, keep in touch!

B: So many great new shows have come out recently - which ones are your

favorites right now? Did anything interesting happen in last night's episode of got?

L: I have to finish now. Talk later!

B: You said that before but okay...i'll be here if/when ever you're ready to talk tv again